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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/561,261

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EXAMINER

HO, ANTHONY

ART UNIT

PAPER NUMBER

2815

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/561,261	Applicant(s) SCHOO ET AL.	
	Examiner ANTHONY HO	Art Unit 2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 July 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22-35 and 42-47 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22-35 and 42-47 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 15, 2008 has been entered.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 42 and 43 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 42 recites the limitation, "wherein the detector comprises at least one photodiode for each of said channels," but there is no support in the originally filed

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specification for the added limitation of "for each of said channels." Thus, the added limitation of "for each of said channels" is being treated as new matter.

Claim 43 is rejected for being dependent on a rejected base claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 22-34 and 47 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Yu et al (US PUB 2002/0017612).

In re claims 22, 34 and 47, Yu et al discloses a detection system having at least one semiconductive electroluminescent active layer, wherein the emission spectrum of the diode exhibits at least two intensity maxima and wherein the active layer comprises at least one electroluminescent organic compound (paragraph 0080 – paragraph 0112). Yu et al also discloses a detector in optical communication with the LED (see Figure 1). It is inherent that a detector comprises a signal channel and a separate reference

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channel since these parts are essential for the intended use of a detector. It is also obvious to one of ordinary skill in the art to have a detector comprising a signal channel and a separate reference channel since this is within the scope of one of ordinary skill in the art.

The recitation “provides for the simultaneous emission of at least two intensity maxima of different wavelengths of light from the active layer” in the claim specifies an intended use or field of use and is treated as nonlimiting since it has been held that in device claims, intended use must result in a structural difference between the claim invention and the prior art in order to patentably distinguish the claim invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. *In re Casey*, 152 USPQ 235 (CCPA 1967); *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). A claim containing a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

Furthermore, the recitation “provides for the simultaneous emission of at least two intensity maxima of different wavelengths of light from the active layer” in the claim is functional language and is treated as nonlimiting since it has been held that in device claims, the device must be distinguished from the prior art in terms of structure rather than function. *In re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997) The absence of a disclosure in a prior art reference relating to function

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did not defeat the Board's finding of anticipation of claimed apparatus because the limitations at issue were found to be inherent in the prior art reference. See MPEP 2114.

In re claims 23, 24, 27 and 28, Yu et al discloses using one of the listed materials in the semiconductor device (paragraph 0080 – paragraph 0112).

In re claims 25 and 26, the recitation “wherein the at least two different intensity maxima of the different wavelengths are emitted by a first and a second electroluminescent compound” in the claim specifies an intended use or field of use and is treated as nonlimiting since it has been held that in device claims, intended use must result in a structural difference between the claim invention and the prior art in order to patentably distinguish the claim invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. *In re Casey*, 152 USPQ 235 (CCPA 1967); *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). A claim containing a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

Furthermore, the recitation “wherein the at least two different intensity maxima of the different wavelengths are emitted by a first and a second electroluminescent compound” in the claim is functional language and is treated as nonlimiting since it has been held

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that in device claims, the device must be distinguished from the prior art in terms of structure rather than function. *In re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997) The absence of a disclosure in a prior art reference relating to function did not defeat the Board's finding of anticipation of claimed apparatus because the limitations at issue were found to be inherent in the prior art reference. See MPEP 2114.

The recitation "wherein the first compound has a maximum in the emission spectrum at a different wavelength than the second compound" is an inherent property since Yu et al discloses using the same materials as in the present application.

In re claims 29-33, Yu et al shows the emission of at least two intensity maxima and their differences between them (i.e. Figures 15A-15C).

Claim Rejections - 35 USC § 103

Claims 22-34 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burroughes (GB 2340304) in view of Capasso et al (US Patent 6,278,134).

In re claims 22, 34 and 47, Burroughes discloses a light emitting diode having at least one semiconductive electroluminescent active layer (page 12) which comprises at least two different electroluminescent functionalities (page 12, first paragraph), wherein the emission spectrum of the diode exhibits at least two intensity maxima (Figure 14) and wherein the LED comprises an electroluminescent polymer (F6M) and an electroluminescent single dye (perylene).

The recitation “provides for the simultaneous emission of at least two intensity maxima of different wavelengths of light from the active layer” in the claim specifies an intended use or field of use and is treated as nonlimiting since it has been held that in device claims, intended use must result in a structural difference between the claim invention and the prior art in order to patentably distinguish the claim invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. *In re Casey*, 152 USPQ 235 (CCPA 1967); *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). A claim containing a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

Furthermore, the recitation “provides for the simultaneous emission of at least two intensity maxima of different wavelengths of light from the active layer” in the claim is functional language and is treated as nonlimiting since it has been held that in device claims, the device must be distinguished from the prior art in terms of structure rather than function. *In re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997) The absence of a disclosure in a prior art reference relating to function did not defeat the Board’s finding of anticipation of claimed apparatus because the limitations at issue were found to be inherent in the prior art reference. See MPEP 2114.

Capasso et al discloses a detector in optical communication with the LED (see Figure 7). It is inherent that a detector comprises a signal channel and a separate reference channel since these parts are essential for the intended use of a detector. It is also obvious to one of ordinary skill in the art to have a detector comprising a signal channel and a separate reference channel since this is within the scope of one of ordinary skill in the art.

The advantage is to provide the use of a single light source for generating a reference signal and a detection signal in a detection system wherein the λ_{\max} of the reference signal differs from the λ_{\max} of the detection signal (see column 2, lines 16-21; column 9, lines 22-29).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the light emitting diode as taught by Burroughes with a detector in optical communication with the LED as taught by Capasso et al in order to provide the use of a single light source for generating a reference signal and a detection signal in a detection system wherein the λ_{\max} of the reference signal differs from the λ_{\max} of the detection signal.

In re claims 23, 24, 27 and 28, Burroughes discloses using one of the listed materials in the semiconductor device (i.e. page 12).

In re claims 25 and 26, the recitation "wherein the at least two different intensity maxima of the different wavelengths are emitted by a first and a second electroluminescent

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compound” in the claim specifies an intended use or field of use and is treated as nonlimiting since it has been held that in device claims, intended use must result in a structural difference between the claim invention and the prior art in order to patentably distinguish the claim invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. *In re Casey*, 152 USPQ 235 (CCPA 1967); *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). A claim containing a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

Furthermore, the recitation “wherein the at least two different intensity maxima of the different wavelengths are emitted by a first and a second electroluminescent compound” in the claim is functional language and is treated as nonlimiting since it has been held that in device claims, the device must be distinguished from the prior art in terms of structure rather than function. *In re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997) The absence of a disclosure in a prior art reference relating to function did not defeat the Board’s finding of anticipation of claimed apparatus because the limitations at issue were found to be inherent in the prior art reference. See MPEP 2114.

The recitation “wherein the first compound has a maximum in the emission spectrum at a different wavelength than the second compound” is an inherent property since Burroughes discloses using the same materials as in the present application.

In re claims 29-33, Burroughes shows the emission of at least two intensity maxima and their differences between them (i.e. Figures 6, 14 and 19).

Claims 22-35 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hatwar (EP 1286569) in view of Capasso et al (US Patent 6,278,134).

In re claims 22, 34, 35 and 47, Hatwar discloses a light emitting diode having at least one semiconductive electroluminescent active layer (Table 1) which comprises at least two different electroluminescent functionalities (Table 1), wherein the emission spectrum of the diode exhibits at least two intensity maxima (Figure 8) and wherein the LED comprises a filter (paragraph 0050; paragraph 0096; paragraph 0060), which filter selectively has at least a reduced transmission of light of a wavelength between two consecutive maxima (the filter selects one maxima to produce a red, green or blue and has a reduced transmission for other wavelengths, therefore at least for wavelengths between two maxima).

The recitation “provides for the simultaneous emission of at least two intensity maxima of different wavelengths of light from the active layer” in the claim specifies an intended use or field of use and is treated as nonlimiting since it has been held that in device claims, intended use must result in a structural difference between the claim invention and the prior art in order to patentably distinguish the claim invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. *In re Casey*, 152 USPQ 235 (CCPA 1967); *In re Otto*, 136 USPQ 458,

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459 (CCPA 1963). A claim containing a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

Furthermore, the recitation “provides for the simultaneous emission of at least two intensity maxima of different wavelengths of light from the active layer” in the claim is functional language and is treated as nonlimiting since it has been held that in device claims, the device must be distinguished from the prior art in terms of structure rather than function. *In re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997) The absence of a disclosure in a prior art reference relating to function did not defeat the Board’s finding of anticipation of claimed apparatus because the limitations at issue were found to be inherent in the prior art reference. See MPEP 2114.

Capasso et al discloses a detector in optical communication with the LED (see Figure 7). It is inherent that a detector comprises a signal channel and a separate reference channel since these parts are essential for the intended use of a detector. It is also obvious to one of ordinary skill in the art to have a detector comprising a signal channel and a separate reference channel since this is within the scope of one of ordinary skill in the art.

The advantage is to provide the use of a single light source for generating a reference signal and a detection signal in a detection system wherein the λ_{\max} of the reference

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signal differs from the λ_{\max} of the detection signal (see column 2, lines 16-21; column 9, lines 22-29).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the light emitting diode as taught by Hatwar with a detector in optical communication with the LED as taught by Capasso et al in order to provide the use of a single light source for generating a reference signal and a detection signal in a detection system wherein the λ_{\max} of the reference signal differs from the λ_{\max} of the detection signal.

In re claims 23, 24, 27 and 28, Hatwar discloses using one of the listed materials in the semiconductor device (i.e. Table 1).

In re claims 25 and 26, the recitation "wherein the at least two different intensity maxima of the different wavelengths are emitted by a first and a second electroluminescent compound" in the claim specifies an intended use or field of use and is treated as nonlimiting since it has been held that in device claims, intended use must result in a structural difference between the claim invention and the prior art in order to patentably distinguish the claim invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. *In re Casey*, 152 USPQ 235 (CCPA 1967); *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). A claim containing a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus if the

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prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

Furthermore, the recitation “wherein the at least two different intensity maxima of the different wavelengths are emitted by a first and a second electroluminescent compound” in the claim is functional language and is treated as nonlimiting since it has been held that in device claims, the device must be distinguished from the prior art in terms of structure rather than function. *In re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997) The absence of a disclosure in a prior art reference relating to function did not defeat the Board’s finding of anticipation of claimed apparatus because the limitations at issue were found to be inherent in the prior art reference. See MPEP 2114.

The recitation “wherein the first compound has a maximum in the emission spectrum at a different wavelength than the second compound” is an inherent property since Hatwar discloses using the same materials as in the present application.

In re claims 29-33, Hatwar shows the emission of at least two intensity maxima and their differences between them (i.e. Figure 8).

Claims 44-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yu et al (US PUB 2002/0017612) as applied to claim 22 above, and further in view of Dickert et al, “Solvatochromic betaine dyes as optochemical sensor materials: detection of polar and non-polar vapors,” *Sensors and Actuators B*, 70, (2000), 263-269.

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Dickert et al discloses a suitable coating for polar and non-polar vapors in a sensor device (i.e. Introduction).

The advantage is to optimize the sensor behavior of the sensor device (i.e. Abstract).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the detection system as taught by Yu et al with a suitable coating for polar and non-polar vapors in a sensor device as taught by Dickert et al in order to optimize the sensor behavior of the sensor device.

Claims 44-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burroughes (GB 2340304) in view of Capasso et al (US Patent 6,278,134) as applied to claim 22 above, and further in view of Dickert et al, "Solvatochromic betaine dyes as optochemical sensor materials: detection of polar and non-polar vapors," *Sensors and Actuators B*, 70, (2000), 263-269.

Dickert et al discloses a suitable coating for polar and non-polar vapors in a sensor device (i.e. Introduction).

The advantage is to optimize the sensor behavior of the sensor device (i.e. Abstract).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the detection system as taught by Burroughes in view of Capasso with a suitable coating for polar and non-polar vapors in a sensor device as taught by Dickert et al in order to optimize the sensor behavior of the sensor device.

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Dickert et al discloses a suitable coating for polar and non-polar vapors in a sensor device (i.e. Introduction).

The advantage is to optimize the sensor behavior of the sensor device (i.e. Abstract).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the detection system as taught by Hatwar in view of Capasso with a suitable coating for polar and non-polar vapors in a sensor device as taught by Dickert et al in order to optimize the sensor behavior of the sensor device.

Response to Arguments

Applicant's arguments filed July 15, 2008 have been fully considered but they are not persuasive.

In response to applicant's argument that Yu et al is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, the

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devices of the present invention and the prior art reference, Yu et al, are related to a detection system.

In response to applicant's argument that the amendment which recites that the two different wavelengths be emitted simultaneously addresses the concern of intended use, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. Examiner asserts the amendment contains a recitation of intended use.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Arias et al, "Doped conducting-polymer – semiconducting-polymer interfaces: Their use in organic photovoltaic devices," *Physical Review B*, Vol. 60, No. 3, 1999, 1854-1860.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANTHONY HO whose telephone number is (571) 270-1432. The examiner can normally be reached on M-Th: 10:30AM-9:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Parker can be reached on 571-272-2298. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. H./
Examiner, Art Unit 2815

/Kenneth A Parker/
Supervisory Patent Examiner, Art Unit 2815